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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,148	02/13/2002	Jun Sunakawa	Q68522	5452

7590 05/02/2003

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EXAMINER

WYSZOMIERSKI, GEORGE P

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 05/02/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N . 10/073,148	Applicant(s) NAGAO ET AL.	
	Examiner George P Wyszomierski	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. (U.S. Patent 6,401,799) in view of East German patent 266,046.

Arai discloses producing amorphous magnetic ribbons by ejecting a melt of the desired material onto a rotating quench wheel. In order to maintain an appropriate surface roughness in the final products, the peripheral surface of the quench wheel in Arai may be subjected to grinding; see Arai column 8, lines 30-33. With regard to instant claims 3 and 4, the examiner notes that these claims define using materials which contain a certain percentage "or less" of various elements, and the examiner asserts that processes which utilize compositions containing 0% of those elements fully meet the claimed requirements. With regard to instant claims 6-9, Arai column 15, lines 1-10 discloses roll speeds and ribbon thickness as presently claimed. While Arai does not specify the presently claimed melt temperature range, the examiner submits that clearly the melt temperature in the prior art must be higher than the melting point of the alloy, and that one of ordinary skill in the art would select a temperature which is high enough to insure proper melting but which, for economic reasons, is not excessively higher than the melting point.

Arai does not disclose the use of carbon dioxide gas as presently claimed. The East German patent indicates that it was known in the art, at the time of the present invention, to supply carbon dioxide gas to a melt pool being sprayed onto a rotating cooling roller surface. The '046 patent indicates that this reduces surface roughness, i.e. the same purpose for which

the carbon dioxide is employed in the claimed invention. This disclosure of DD '046 would have motivated one of ordinary skill in the art, seeking to produce ribbons of low surface roughness, to include a carbon dioxide spray when performing the process of Arai et al.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of East German patent 266,046, as set forth supra, and further in view of Lieberman (U.S. Patent 4,676,298) or DeCristofaro et al. (U.S. Patent 6,299,989).

The Arai process does not specifically recite grinding with a brush, as required by the instant claim. Lieberman column 7, line 33 and DeCristofaro column 3, line 63 indicate that it was known, at the time of the present invention, to grind the surface of a quench wheel with a brush in processes of making amorphous alloy ribbons. These disclosures, combined with those of Arai et al. and DD '046, would have taught the presently claimed invention to one of ordinary skill in the art.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of East German patent 226,046, as set forth in item no. 2 supra, or over this combination of references in view of Yoshizawa et al. (U.S. Patents 5,611,871 or 5,966,064).

The examiner submits that one of ordinary skill in the art would recognize that heating an amorphous alloy to above its crystallization temperature for a short time would result in the formation of small crystal grains in the alloy, and thus the presently claimed process would be an obvious variant of the process as disclosed by the combination of Arai et al. and DD '046.

In any event, the Yoshizawa patents indicate it to be conventional in the art to produce nano-crystalline structures in amorphous alloy ribbons which have been formed on a rotating

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quench wheel, by subjecting the ribbons to a heat treatment step. Thus, the disclosures of Yoshizawa et al., when combined with the processes as taught by the combination of Arai et al. and DD '046, would have taught the claimed process to one of ordinary skill in the art.

5. The remainder of the art cited on the enclosed PTO -892 and 1449 forms is of interest.

This art is held to be no more relevant to the claimed invention than the art as applied in the rejections, supra.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (703) 308-2531. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for this Group is (703) 872-9310 for all correspondence except for After Final amendments in which case the Fax number is (703) 872-9311. The Right fax number for this examiner is (703) 872-9039. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



GEORGE WYSZOMIERSKI
PRIMARY EXAMINER

GPW
April 30, 2003